

**What is claimed is:**

1. An access management system managing access to  
a smart card by a plurality of applications,  
5 comprising:

an exclusion control unit allowing an  
application exclusive access to a smart card, in  
response to an exclusive access request for the  
smart card from the application, when the smart  
10 card has a logical channel not exclusively accessed  
by another application; and

an access control unit permitting the  
application allowed the exclusive access to access  
the smart card, in response to an access request  
15 for the smart card from the application, when the  
application has already been authenticated for the  
smart card.

2. The system according to claim 1, wherein

20 said exclusion control unit queues an  
application which issues an exclusive access  
request in response to an exclusive access request  
for the smart card from the application when the  
smart card has no logical channel not exclusively  
25 accessed by another application.

3. The system according to claim 1, wherein  
said access control unit rejects the access  
request from the application allowed the exclusive  
5 access if the application has not been  
authenticated for the smart card.
4. The system according to claim 1, wherein  
said access control unit manages  
10 authentication between an application and a smart  
card using a process ID of the application.
5. The system according to claim 1, wherein  
said access control unit changes an  
15 application authenticated for a smart card into a  
non-authenticated application when the smart card  
is extracted from a smart card reader.
6. The system according to claim 1, wherein  
when said application accesses the smart card  
plural times, said application issues the exclusive  
access request to said exclusion control unit each  
time the access is started, and issues an exclusive  
access cancellation notification to said exclusion  
25 control unit each time the access terminates.

7. The system according to claim 6, wherein  
said exclusion control unit queues an  
application which issues an exclusive access  
request for a smart card if the smart card has  
already been exclusively accessed by another  
application, and allows the queued application  
exclusive access upon receipt of the exclusive  
access cancellation notification from the  
application which has exclusively accessed the  
smart card.

8. The system according to claim 1, wherein  
said access control unit request a smart card  
to cancel authentication of an application, in  
response to a smart card authentication  
cancellation notification from the application,  
when the application is the last application  
authenticated for the smart card.

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9. An access management system managing access to  
a smart card by a plurality of applications,  
comprising:

exclusion control means for allowing an  
application exclusive access to a smart card, in

response to an exclusive access request for the smart card from the application, when the smart card has a logical channel not exclusively accessed by another application; and

5           access control means for permitting the application allowed the exclusive access to access the smart card, in response to an access request for the smart card from the application, when the application has already been authenticated for the smart card.

10           10. A method for sharing a smart card and managing access to the smart card by a plurality of applications, comprising:

15           allowing an application exclusive access to a smart card, in response to an exclusive access request for the smart card from the application, when the smart card has a logical channel not exclusively accessed by another application; and

20           permitting the application allowed the exclusive access to access the smart card, in response to an access request for the smart card from the application allowed the exclusive access, when the application allowed the exclusive access has already been authenticated for the smart card.

11. An application including a plurality of accessing processes to one smart card, wherein:

an exclusive access request is issued for each  
5 accessing process each time the accessing process  
is started, and an exclusive access cancellation  
notification is issued each time each accessing  
process terminates; and

10 an authentication request is issued for a  
smart card to be accessed only in a first accessing  
process in said plurality of accessing processes.

12. A library of an application including a  
plurality of accessing processes to one smart card,  
15 wherein:

an exclusive access request is issued for each  
accessing process each time the accessing process  
is started, and an exclusive access cancellation  
notification is issued each time each accessing  
20 process terminates; and

an authentication request is issued for a  
smart card to be accessed only in a first accessing  
process in said plurality of accessing processes.

25 13. A storage medium readable by an information

processing device, in which a plurality of applications are operated in parallel, storing a program used to direct the information processing device to perform the processes of:

5           allowing an application exclusive access to a smart card, in response to an exclusive access request for the smart card from the application, when the smart card has a logical channel not exclusively accessed by another application; and

10          permitting the application allowed the exclusive access to access the smart card, in response to an access request for the smart card from the application, when the application has already been authenticated for the smart card.

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